

Dr. Coues was a student and thorough investigator in diversified fields. The fruits of his labors were prolific. He was a literary man, brilliant in composition, and radiating an atmosphere of culture. The world will know him best and longest as an ornithologist, but I believe that dearest to his heart was his work as historian of the Lewis and Clark Journals recording the greatest expedition of our country.

Nowhere did I find reference to the personal or home life of Elliott Coues save that "Prof. Coues was twice married; once early in life, and again in 1887 to Mrs. M. E. Bates who was well fitted to aid him in his scientific work."¹⁸

Of deep warm friendships little is revealed and perhaps they were not possible to one who had such a wealth of historical and scientific knowledge to give to the world. No soul can wholly reveal itself in this life, and often what lies deepest in the human heart fails of expression and hides a warmth of personality that would draw men together as individuals. We know that back of varied and tremendous expression through his writings stands the man Dr. Elliott Coues greater than all his works.

SIoux CITY, IOWA.

THE FLORIDA CORMORANT AS OBSERVED IN PINELLAS COUNTY, FLORIDA

BY WILLIAM G. FARGO

The following notes relative to that form of the Double-crested Cormorant (*Phalacrocorax auritus floridanus*) which inhabits the southeastern portions of the United States are from observations made during annual visits from January to May in the years 1923 to 1929. While these particular notes pertain to the mid-section of the west coast of the Florida peninsula, I have noticed no variation in the general habits of this cormorant elsewhere on the Florida coasts.

Cormorants are occasionally seen on the fresh water lakes of Florida, but I have collected none there and am not aware whether they represent the southern or the northern form. In general the Florida Cormorant is a coastal species, a bird of the salt water. They swarm throughout Tampa Bay and its tidal estuaries.

In the years 1924, 1925, and 1926 these cormorants roosted in large numbers nightly during the winter and early spring months on

¹⁸National Cyclopedia of American Biography, page 241.

exposed sand bars lying to the north of the entrance to Tampa Bay. In 1925 the winter roost on the bar to the south of Pass-a-Grille averaged about three thousand cormorants. About sunrise they would leave this roost in single file, the individuals about eight or ten feet apart, and separated into flocks of fifty to one hundred by longer gaps.

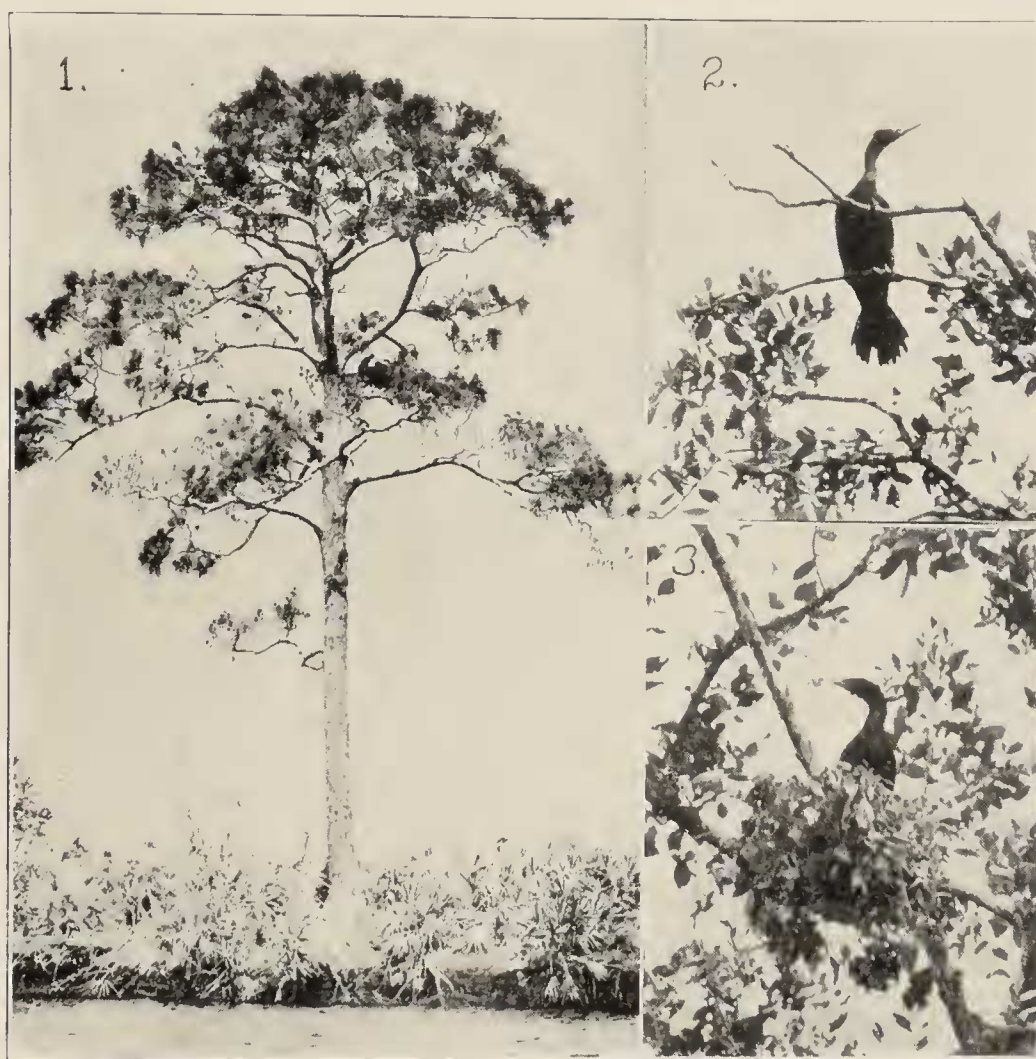


FIG. 10. 1. Pine tree on Ward's Island containing thirty nests of the Florida Cormorant. April 14, 1929. 2. Florida Cormorant with the crests raised. 3. A leafy nest of the Florida Cormorant in a Mangrove tree on Bird Key.

The practically continuous flight of the cormorants nearly every morning of this period in 1925 lasted fifteen or twenty minutes and, passing a few hundred feet off shore of Boca Ciega Bay, enabled a fair count of the birds to be made.

The time of leaving the roost varied with the weather and probably with the fishing conditions, for the cormorant does not fish much in a rough sea. The winds are strong much of the time on this sec-

tion of the Gulf Coast and choppy seas result, both in Tampa Bay and in the smaller Boca Ciega Bay. I recall one day in late winter when the cormorants remained on the roost until early afternoon, although the water was calm. Then nearly the whole roost in a dense raft drifted into Boca Ciega Bay on the rising tide. The near side of this raft of birds following the strongest tide past the town of Pass-a-Grille was within fifty yards of shore. As they drifted past the populous part of the town they would rise in the air in detached flocks and fly back beyond the rear of the raft to repeat the process. So far as I was able to observe they did little feeding that day and returned to the roost within an hour from the time they came in on the tide.

Due to encroaching civilization, and possibly other causes, the number of cormorants roosting on the bars immediately south of Pass-a-Grille has been much reduced since 1925. Only a few roosted there in 1928 and 1929 compared with previous years: perhaps as many as 800 or 1,000 on all the bars between Pass-a-Grille and Mullet Key, a distance of two and one-half miles.

The cormorant feeds principally upon fish and, like the Mergansers, can easily swallow fish that seem quite too large for its throat. The fish are mostly taken while the birds are diving or swimming below the surface. Fishermen in these waters using live bait not infrequently hook cormorants and occasionally Brown Pelicans. Usually the pelican breaks the line and escapes but the cormorant often is landed. The Red-breasted Merganser common on this coast in winter is also caught in this manner.

Various species of birds that feed on fish, and especially the diving birds fly long distances daily from their roosting places to take fish when food is scarce nearer by. Thus various gulls, terns, and Florida Cormorants may be seen returning to the roosts a half hour or more after dark at night. In these latitudes there is little twilight, darkness following soon after sunset; consequently at sunset and shortly before, the air near the roosting places is full of birds winging their way home. In a stiff wind they fly as close to the crests of the waves as possible, for the wind resistance is less there.

The "double-crest" of this cormorant consisting of two pointed tufts of feathers, one on each side of the head pointing upward and backward, begins to appear upon the heads of the adults early in March in the latitude of Tampa Bay. These tufts, in shape somewhat resembling mule's ears can be erected and lowered. The crests are not seen after about the time when mating is over and the eggs are

laid. An unmated adult appears to carry the crests for a considerable time.

Like the Brown Pelicans of the Tampa Bay region, the Florida Cormorants leave their roosting places when the nesting season arrives and when not fishing both males and females may be found in the nesting colony. There appear to be but two breeding colonies of Florida Cormorants on the Gulf side of Pinellas County, that is to say in a distance of about forty miles of coast. If there are others on the east side of the Pinellas Peninsula I have not discovered them.

The larger of these nesting colonies is on Bird Key (also called Indian Key) a federal reservation in Tampa Bay southwest of St. Petersburg. This low-lying key with only its shore rims above high tide is a little more than a half mile in length and less than half as wide. It has a central lagoon open to the north. The key is thickly covered with mangrove trees, mostly the red and black varieties. Few of the mangroves are over twenty feet in height. On this key several thousand birds have nested each spring in recent years. Among the species nesting there are Florida Cormorants, Ward's Herons, Little Blue Herons, Louisiana Herons, Black-crowned and Yellow-crowned Night Herons, American Egrets, Snowy Herons, White Ibises and Brown Pelicans. In general each one of these different species has its separate habitat although the Ward's Herons are scattered about more, as this species nests nearly throughout the year. My observations on Bird Key were made in the early spring months of 1924-25-26-27 and 1928. Without disturbing the birds unduly it is most difficult to estimate closely the number of any one species nesting there. However in 1925 approximately 1,800 pairs of Florida Cormorants nested on this key, in latter years a less number, but still large colonies.

The cormorant nests are in the upper slender branches of the larger mangroves, eighteen to about twenty-two feet above ground, and the colony has been in the years mentioned near the northwest side of the key. Mating and nest building begin late in March or early in April. The nests are rather flat and fragile mostly composed of green branches of the mangroves often with leaves attached. In the years mentioned the whole colony appeared to begin nest building about the same time, that is there was little evidence of late nesters nor have I noticed any indications of more than one brood. However later visits than those I have made in May would be necessary to determine this. Three eggs seem to make the usual clutch.

Adjoining this cormorant colony and to some extent overlapping on the east has been the American Egret colony. To the north of the egrets until 1928 has been the Ward's Heron colony, but in that year this species went to Tarpon or Bush Key lying two miles to the southeast.

All of these different species of birds appear to dwell in harmony.

On Bird Key if one moves about slowly and quietly a blind is unnecessary in studying and photographing the birds; that is if one is satisfied by approaching them within about thirty or thirty-five feet. Many times I have watched the cormorants mating and constructing nests at such distances and the birds hardly indicated that they were aware of my presence but if one climbs a tree in the colony or otherwise disturbs them they are likely to leave their nests with a rush and raft for a long time on the waters of the bay near the key.

The cormorant is a bit awkward among the slender top branches of the mangroves for the bird is web-footed and heavy but where they nest in trees with branches strong enough to bear their weight without bending, as in pines or cypresses, they seem quite agile for such a bird.

For nest construction any sticks about a half to three-fourths of an inch in diameter suffice. On Bird Key green mangrove branches broken off and with leaves attached are mostly used. Some few leaves are also laid in the rather flat nest bottom. One of the birds of a pair remains on the nest platform as soon as the start at building is made and the other brings a stick. The pair sit side by side facing the same direction, both grasp the stick and lay it in place after which they often caress by rubbing bills, and one or the other goes for another stick. If one of the pair did not remain on the nest during construction the neighboring birds would at once pilfer nest material.

Copulation takes place in the trees at the nest site or near it, apparently before the nest is begun. The male grasps the female by the feathers at the back of the neck as in the case with domestic fowl.

The other considerable breeding colony of Florida Cormorants in Pinellas County is along or near the mainland shore of the Gulf of Mexico about a mile south of the village of Ozona. In 1925 the cormorants nested in low mangroves on some small islands close to the mainland. Early in April, 1929, Florida Cormorants were observed nesting in large long leaf yellow pine trees on Ward's Island which lies some 500 feet off the mainland shore about a mile and a quarter south of Ozona. This small island about an eighth of a mile in length is in the general area where Florida Cormorants have nested and

roosted for many years. One large pine had thirty occupied nests on April 7, 1929, and several other pines had as many as twelve nests each. In all there were then about 125 nests in this colony. I visited the colony again April 14 and made photographs from a boat as close as fifty feet without causing any apparent uneasiness among the sitting birds.

The nests of these cormorants in the pines are in most cases more bulky, much deeper and in general better constructed than those in the mangroves. The reasons are evident; the upper branches of the mangroves afford a poor and unstable foundation, there are seldom suitable crotches to receive a deep nest and nest material is less plentiful in the mangrove areas. The cormorants in the pine colonies, how-



FIG. 11. Florida Cormorant on nest of sticks at Ozona, Florida. April 24, 1929.

ever, exhibited the same habits in mating and nest building as described above for the occupants of the Bird Key colony.

On April 14, 1929, I noticed from a distance about eighty cormorants apparently roosting late in the forenoon in tall yellow pine trees on the mainland in the southwest part of the village of Ozona, directly alongside the paved road that follows the shore. Upon going there I found a few nests approaching completion and a dozen or more being started. The cormorants would fly to the ground, grasp sticks and twigs, often with the long gray moss (*Tillandsia*) attached and fly back to the trees. Passing cars and people afoot within a hundred feet caused little concern.

On April 24, 1929, I again visited this mainland cormorant colony and found about twenty-five nests occupied and more under construction. Numerous photographs were made at distances of forty or fifty feet without recourse to a blind, using a 19-inch focus lens. The ground beneath the pines, being nearly clear of under-growth and all in bright sunlight, made one far more conspicuous than in a densely shaded mangrove colony. When I approached nearer than forty feet a few birds left their nests without particular alarm and perched in nearby trees. As I moved away after photographing, two Fish Crows (*Corvus ossifragus*) came into the colony and approached the unprotected nests for the purpose of stealing eggs, but by the time I had reached the highway, a hundred feet off, these nests were again occupied by the owners.

On Bird Key if visitors land in the company of the warden and are not quiet and slow moving the birds of all sorts become frightened and leave the nests. This is always a signal for several waiting Fish Crows and vultures—both the Black Vulture and the Turkey Buzzard—to start an egg hunt. In the Ozona colonies the birds are more accustomed to seeing people nearby and, being unharmed by them, have gained confidence.

This confidence of the birds of various species in the presence of numerous people has become a common occurrence in Florida. Water birds swarm along shores where traffic passes the nearest. Herons and egrets alight on docks and take bait minnows from the wells of anchored motor boats. Guns in the hands of boys and idle men are much scarcer than in even quite recent years and the birds are gaining confidence.

The cormorants only frequent Bird Key during the nesting season and the same is true of the herons and pelicans that nest there, but the cormorant rookeries near Ozona also serve as roosts at least during the winter and spring months. I have not been there in summer. In consequence of this more or less continual use of the trees by cormorants they become white-washed by the excrement and ultimately are killed. I have observed no cormorants nesting in the dead trees.

Secluded bars and beaches are scarce in the vicinity of Ozona which probably accounts for the tree roosting habit of the cormorants of that colony. The cormorant generally roosts in close formation, whether it be on a bar, beach, or in trees. This close roosting habit of cormorants and their liking for isolated roosting and resting places off shore has been taken advantage of by collectors of guano along

the gulf coast of Florida who have built tight plank platforms on piles at intervals from Tampa Bay to Cedar Keys, as I have observed, and very likely beyond those limits.

The cormorant although heavy of body and short of wing is an easy and swift flier. The flatness of the body, large tail area, and the shape of the head and neck result in a good "stream-line" proportion, all contributing to the ease of its flight. I never have seen a cormorant soar. The Anhinga whose body from the point of view of flight characteristics much resembles that of the cormorant is both swift in flight and accomplished in soaring. Anhingas often may be seen one or two thousand feet in the air over their cypress swamp retreats circling about on set wings as gracefully as any hawk or vulture. Pelicans, especially the White Pelicans, do the same thing occasionally.

In the cormorant nesting colonies the young, like young herons, will disgorge partly digested fish when alarmed by the presence of man, and the large size of such fish often is surprising.

JACKSON, MICHIGAN.

SPRING BIRD NOTES FROM RANDOLPH COUNTY, GEORGIA

BY FRANCIS HARPER

Ornithological literature for southwestern Georgia is so meager that even such a slight contribution as the present one may be helpful in filling some gaps in our knowledge of bird distribution in that part of the state. As far as I am aware, there is no general bird list available for any part of the "Red Hills" region of Georgia. This is a physiographic area or natural division extending across the state, a little below the fall line, from Augusta to Fort Gaines (and also into South Carolina, Alabama, and Mississippi). It averages about thirty miles in width, and includes the greater part of Randolph County.¹

I happened to spend the period from March 16 to April 18, 1921, on a farm about seven miles northeast of Cuthbert, the county seat. Meanwhile, though the amount of time devoted to ornithological observations was rather limited, I kept a daily list of the birds found in the dooryard and in the near-by fields and woods. This was a time of year when some of the winter residents still remained, while transients and summer residents were arriving from the south.

¹For a map and a further description of this region, see R. M. Harper, *School Sci. and Math.*, vol. 18, no. 8, Nov., 1918, p. 704; also *Georgia Hist. Quart.*, vol. 6, no. 2, July, 1922, p. 101.